CLAIMS

1. A system for balancing first and second work outputs between first and second cylinder banks of an engine, comprising:

a first intake camshaft associated with said first cylinder bank;

5   a first fuel injector associated with said first cylinder bank; and

a controller that trims a pulse-width of said first fuel injector until first and second A/F ratios of respective exhaust of said first and second cylinder banks are equivalent, adjusts timing of said first intake

10   camshaft to effect air flow into said first cylinder bank and trims said pulse-width to maintain equivalency of said first and second A/F ratios.

2. The system of claim 1, further comprising a first cam phaser that is interconnected with said first intake camshaft and that adjusts said timing of said first intake camshaft.

3. The system of claim 1, further comprising first and second exhaust oxygen sensors located in respective exhaust flow paths of said first and second cylinder banks, wherein said controller determines said first and second A/F ratios of said first and second

5   cylinder banks based on signals from said first and second oxygen sensors.

4. The system of claim 1, further comprising:

a second intake camshaft associated with said second cylinder bank; and

a second fuel injector associated with said second cylinder

5   bank, wherein said controller trims a pulse-width of said first and second fuel injectors until said fuel injectors achieve a target pulse-width, adjusts timing of said first and second intake camshafts to effect

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respective air flows into said first and second cylinder banks and maintains equivalency of said first and second A/F ratios.

5. The system of claim 4, wherein said controller determines said target pulse-width ratio based on engine speed and manifold absolute pressure.

6. The system of claim 4, further comprising a second cam phaser that is interconnected with said second intake camshaft and that adjusts said timing of said second intake camshaft.

7. A method of balancing first and second work outputs between first and second cylinder banks of an engine, comprising:

trimming a fuel injector pulse-width of one of said first and second cylinder banks until first and second A/F ratios of said first and

5   second cylinder banks are equivalent;

adjusting timing of a camshaft of one of said first and second cylinder banks to effect air flow into one of said first and second cylinder banks; and

trimming said fuel injector pulse-width to maintain

10   equivalency of said first and second A/F ratios.

8. The method of claim 7, further comprising:

determining said first and second A/F ratios of said first and second cylinder banks; and

comparing said first and second A/F ratios, wherein said step

5   of trimming said fuel injector pulse-width occurs if said first and second A/F ratios are not equal.

9. The method of claim 8, wherein said first and second A/F ratios are determined as an average A/F ratio of respective cylinders of said first and second cylinder banks.

10. The method of claim 7, further comprising comparing said fuel injector pulse-widths of said first and second cylinder banks, wherein said step of adjusting timing of said camshaft occurs if said first and second fuel injector pulse-widths are not equal.

11. The method of claim 7, further comprising determining a particular camshaft to adjust based on a current position of said camshafts.

12. The method of claim 7, further comprising:
determining a pulse-width target; and
trimming said fuel injector pulse-widths until said fuel injector pulse-widths are equal to said pulse-width target.

13. The method of claim 12, wherein said pulse-width target is based on engine speed and manifold absolute pressure.

14. A method of balancing first and second work outputs between first and second cylinder banks of an engine, comprising:

determining whether first and second A/F ratios of said first and second cylinder banks are unequal;

5   trimming a fuel injector pulse-width of one of said first and second cylinder banks until said first and second A/F ratios are equivalent;

comparing respective pulse-widths of said first and second cylinder banks;

10   adjusting timing of a camshaft of one of said first and second cylinder banks to effect air flow into one of said first and second cylinder banks if said respective fuel injector pulse-widths are unequal; and

trimming said fuel injector pulse-width to maintain
15 equivalency of said first and second A/F ratios.

15. The method of claim 14, further comprising measuring an oxygen content of respective exhaust streams from said first and second cylinder banks to determine said first and second A/F ratios.

16. The method of claim 14, wherein said first and second A/F ratios are determined as an average A/F ratio of respective cylinders of said first and second cylinder banks.

17. The method of claim 14, further comprising determining a particular camshaft to adjust based on a current position of said camshafts.

18. The method of claim 14, further comprising:
determining a pulse-width target; and

trimming said fuel injector pulse-widths until said fuel injector pulse-widths are equal to said pulse-width target.

19. The method of claim 18, wherein said pulse-width target is based on engine speed and manifold absolute pressure.